

IN THE SPECIFICATION:

Please rewrite the sixth paragraph on page 2, which starts "Brief description of the accompanying drawings" as follows:

Brief description of the accompanying drawings

Fig. 1a. Information storage in DNA. Structure of prototypical single segment information storage in DNA strand.

Fig. 1b. Information storage in DNA. Structure of prototypical multi segment information storage in DNA strand.

Fig. 2. Encryption of extended ASCII character set in terms of DNA bases

Fig. 3. Encryption Key. Extended ASCII characters in terms of DNA strands

Fig. 4 is a process sheet for encryption and storage showing the encoding of digital information for "WELCOME" using the DNA sequence
TTAGTACATAGCTATGTACCTAACTACA (SEQ ID NO: 5) and the following primers:

Header Primer: ATTATATATATATTATAT (SEQ ID NO: 8)

Terminating Primer: TTTATATATATATTATT (SEQ ID NO: 9)

Continued Tail Primer: TTTATATATATATTACCC (SEQ ID NO: 10).

Fig. 5 provides a process summary for encryption and decryption of digital information for "WELCOME" using the DNA sequence of SEQ ID NO: 5 and the header primers of SEQ ID NO: 8.

~~Fig.4. Process sheet for encryption & storage~~

~~Fig.5. Process summary~~

Please replace the second paragraph from the end of page 4, which starts "b)

The input information" with the following:

b) The input information is then encrypted character-by-character using array generated in step 1. The basis is ASCII values of each character is matched with the element no. of the array of step 1.

Encryption of the text "CSIR" in terms of DNA bases may be:

TATGTTCTATTTAC (SEQ ID NO: 5) where:

C is represented by DNA sequence TATG

S is represented by DNA sequence TTTC

I is represented by DNA sequence TATT

R is represented by DNA sequence TTAC

Please replace the fourth paragraph on page 5, which starts "g) The encrypted

DNA" with the following:

g) The encrypted DNA can then be transported on paper, cloths, buttons or through any other medium.

Isolation decryption of above encrypted DNA sequence TATGTTCTATTTAC (SEQ ID NO: 1):

Please replace the seventh paragraph on page 5, which starts “c) Obtained sequence is” with the following:

c) Obtained sequence is interpreted (integrated if multi-segment before interpretation) using DNASTORE software. The basis for retrieval is a string of 4-bases each at a time is taken and matched with array as generated in step 1 of encryption and storage. The element number of matching value is taken and converted to its ASCII equivalent.

If the retrieved sequence is TATGTTCTATTTAC (SEQ ID NO:1). The Decryption would be:

first 4-bases i.e. “TATG” would be in the array storage and encryption 67 = C

next 4-bases i.e. “TTTC” would be in the array of storage and encryption 83 = S

next 4-bases i.e. “TATT” would be in the array storage and encryption 73 = I

next 4-bases i.e. “TTAC” would be in the array of encryption 67 = R

Integration of above decrypted values in the same sequence as retrieved is “CSIR”.

Please replace the first paragraph on page 6, which starts “Example 2. Some examples” with the following:

Example 2. Some examples of DNA encryption for textual data

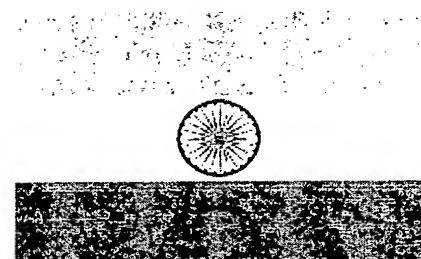
Digital Information	Encrypted DNA sequence
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WELCOME	TTAGTACATAGCTATGTACCTAACTACA (<u>SEQ ID NO:2</u>)
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WORLD PEACE	TTAGTACCTTACTAGCTATAAGCTTCCTACATAGG TATGTACA <u>(SEQ ID NO:3)</u>
INDIA	TATTTATCTATATATTAGG <u>(SEQ ID NO: 4)</u>
CSIR	TATGTTCTATTAC <u>SEQ ID NO:5)</u>
CSIO	TATGTTCTATTACC <u>(SEQ ID NO:6)</u>

Please replace the paragraph bridging pages 6 through 13, which starts, “Example 3. A JPEG image encrypted” with the following:

Digital Information



Encrypted DNA sequence

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TAAATATTTAGAAAACAATCTCGTGGCGATC
GCGCCATGGCTAACCTATCGATCGCTGGT
CGCGTATCAACAATCGTCGGTCGGCGC
CCTACGGGCTTTCGAACCCGTAGGCGAC
ACGGCGCGGCGGATGATTGTCGCCTGCTA
CCCGTGGTGCAGCCAGACCTCGACGCTCC
TGGTACCTGCGCCTCATCGTTATCTTGTG
GAGTGCAAGATGGAGAGTTCCGGACGGG
TAGCAAGCCTGCGTAATATCTCAAATGTCC
AAAGCTTATTGTTCAATAACGTGATCCTT
ACCTGCACATTAGTATTATCACCAAGCGTGCA
CCCATGCGGGCGCCAACCTGCTGGACTTC
GACGCCGCTGTCGTTGCCCTCTGAGTGAAT
GATTGTGCCACTGTGGTGGGGCGCCTAGT
CGGTCGGTCGAGGTGTTCATTAATGGATCG
ATCGACCTATCGAGGAATCGATCGATCGAT

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CGGGCGATCGCGCCATCGATCGATCAGTCG
TCCTACGCCGGCTCTCTCTGCATTCAGCTC
GCTTATCGAGAGGCCTGTGCAAGGAGCCCT
GTTACATTGGCTATCTAAGACATGGGGAC
AGTCGGCCGACAGAGTATAATAGGAACCAC
GCCTAATGGATAACAGCTTCGAAACCCAC
TCCAGAGCCTGTTACTCTAATTGGCTCCG
GGGCTGATGGTGAGGGCTGTGAACCCGGA
CTCCCAGCCTAGGGAGTACAGACCATGATC
CCTATGCCGGATTAGCCCTAGGCTGTCACA
CTAAGCTATCCTCAGCGTGAGCGTGTCCGG
ACTTCGCAGGCTGTGCGTCTTGAGTGCACG
AGTGGACGGCGTGCACGATCCGCGCACGA
ACGCTTCGTCGTTGGTCGTCACGACC
GCCCAACTTCCAGCCATCCAGGTAGCCAC
GCAAGCACATACACATACAGACATTTATAA
TCCACTCTATTATCCAATCTTCTGCTGATC
TGTCTACCTCGTAGGCTCCCTGGCTTAAGT
GCTAACTCACCAAAGTCCGACCTACCAAC
CCTCCGTCTTACCAACCTCCTCGCCGCCG
GCTGCCCTGCCGCTATGCCGGCAGCATTG
CTAGCCACACAGCAAGCATCAGGGCCTGCG
TCAACGCACGCTCCGTCGGCCGGCCGCTC
GTCGGTGCGGAGGGGGAGCGAGGGTAG
GCATGTGGGTGGATGCCGCTTGGACTCCT
CGGCTGATTGCTGACCGAGCCGTAGAATG
ATGCTCAGAAGGAGATCGAGATAGACACGA
TACTTATCAGTCTGTGTATGTACGTTCGT
CCGTGCGTGGTAGGTTGGTCGATCGATTG
ATCTACGTTAACCCACTCTGCCGCGTGAC
ATAATGAATTACCCGCCGCCCCACTGTGCTG
CGAAACCCAGTTACTCAGTTAACCCGACTA

TGCCACGGTACAAAATATCCGGGGTCATC
CGACTTTGCAAATGAATCTAAAGCGCTACGT
TATTGTAAAGATCGTAATTACGAAGCGGTC
GTTAATTAAATCTGAGGTGCAGATGAATACAT
TTAAACCATGCAGTTATTCATCAGTCGCATC
GCAAACCTGTAGACGCTGAATATTAGGTATG
ATTAATGATACGCGTGATGACAATTACGTGT
TTAAGCGCAATTAAATTCTGGTAGCGTTATGC
CTGTCAGGCGGTCTACAACTAGGTTCGA
TCCTTACGACTGGAAGATGGCTCTACACAC
GGACCCCCCAAACCAATTATAGTTACCTAGT
CCTTAAAAACCATACTAGTTGGCTTATTG
ATACTAAGACTAAGCTTACGTCTGACTCGC
GATTAATGGACACACGTTCTGACAAGCTC
CTCGGGGGCCATATATATGCCTGACGCCAG
AAACTGGTCTCATTCTCGATATGAAGCGACC
CAAAGCGCGGTGTATCGTTGTCGAATCCAA
CTAAGATGCATCGCGCGCGGCGGATCAATC
TTACGAGACTCAGGTACTAGTGGTATCGT
GCTGCCTTGTGACGCTTAAATCGTACTTCGT
CGCGATTGATTGTATTATAAACAAATCAGCAA
ATTAATCGATGGCGGACTTATAAAGCTAA
ACTACGCCTTAAAGTTACGCGCTGTGAGCA
GCTGAGGCCGGTCTTAAAGTTCCATACATT
CTATCAATAGCGCTTCTGCCTAGGTATGG
GCTCTAGGGCTATCTTGCCTAAAGTTGACTCA
GAGAGAATTACCTCGGAATAAAACAACACG
CGGCAGTCAGATTTGTCACTATTTACGT
AACTAGGGTGATCTCCGGAATGTCAACTCC
GGGCCCCACACGATGGTGGAGATCTCCTC
GCCCGTGGCTCTGGACTAGACGTTAGGG
CATGCACATACGTTGACGAAATTGTTACGCC

GAGACGATAGAATTATAACCTTCCACCAT
CTAGTATGAGGGATTCATACGCTGCCCTCT
CCTAATAGGAACGTACACTAAATTAAATTGCC
GTGCTACCAATGCGACTACTTGGGATAAC
GGCCTGCGGTTGTCGTCGGGTGAACATATCC
TATCGTTCGACTCTATAGCAAGGCTTATCGT
GCTAACTAATTACATAGTAGGACTATGCC
ACACGGGATGCACATACCCGACTATCGGGT
CCCAGAGACTACGTTGAGGAAAGCCAGGCT
TAGTTTACACATTAACCGATGGCGTGACGG
GGACTTTGTCGTCGGTACATAATCGTCAGG
TCATCAATTCCCTGCTGATATGGCGAAATTGC
TGAGTATCTCTATGGACTAACAACTGCTAGG
TGCTCTGGAGGCCGACCGCCGCGACATACAA
GATAGACACGTCTAACAGCTCGTTTCATC
AACACCATCGTGCATGCCGATCGACGTGGC
ACAAACAAATTGAATAGAAGGCATACTATAT
CGTCTACTTGGTATGGGGCACCTGCCGTC
CAAAACCGTCGAAAAAAGATCTGTTCTAA
TTCATCGTCAGTCGATTGAAATTCTCTCCC
CATACGCATGGACGCAATAAGTATCGATTG
GACACCTCCTCCCAGGTTCAATGTGAAGTG
ACATCGCAACATGAACCCCGCGGGACAGA
ATGCAGTCTTCCCTGCTTAATCTCGTTGGGT
ACAGCTGAAATGCAGTCAGGCGCGGATGGG
GGCCCTCACGGATATGGTGATAATGTT
ACTAGCTTACACGTTCTAGCAGAATTGCG
AAATGACGATAGCCTCCACGCATATGTCCT
TGCCTCTCACATCCGAATTGGCGATGGATG
TCTCTAAATGAATTCTTATGGCGCGACTTT
AACGCTTCCAAGATAACAAACAGATGGTGCT
CCTGAATCACATCTCCTTGATCTTGACATG

GTTCCACCTGTTCCCCGGGCCAACCGTT
AAGCCTTACTATGTGATTGACCTAATATGG
ATAGTCCATCCGGCCATCCGTGTACAATAAT
CCACAGACTCTGTAATTAGAATTACATGCA
CTCCTCTCATCGTATCGGCCTAATGCTAGG
ATCGGGTGCACGATTATACGGCAACTCTGT
CGATGGCCTAGGTTGAAGGGGGATCAACA
CGGTGTACATAGGCCCTACAGCTGACGTT
ACGTATGATGAATGCTTCCTCAATGTAATGC
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AATCAGATATTGGGTTAGGACCTTATCGC
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GGAATACTAAAATTGGAGGGTTCTAGGTC
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AGAGTTATCAACAGGATCTCGGAATTCCCG
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GCTGCTGCCCGTCTCGGCCGGAACGCG
CTTCCAAATTCTCCCTACTAACGCATGCTGA
TGCACCATTGGAGCATTCTGGGATGGCGT

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GACGAGGTCTCTGCTGGGTAGAATTGGTGA
TTTGGAAAGCGATACGGGTTAGTCTCACG
TACTGATGGACTAGTATGCGTGAAGGAATC
GAATACTTCGACACGATGACGTAGGGAGCC
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TGGTTAACCTTATCGCGCTTAAAGA
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AGGGTAGTTACGTACGCCTGAATCTGAACC
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CATTGCGGTGCGCTTATGCCACTGAGTAA
CAAGTGATGTCCAGTGTCTAATACGACCGC
TCGGGTCGATGGTCAAGCGGCACAGTGAC
ATTAACCTTGCTTCACATTGAACAAATTCT
CCCACCTCAGCACATGTACCCCCCTGCTGCA
TACAGACCAGGTCTTGTCCACACCTTGCA
CGGGTGCCTGAATGCCTTCCGCTGGCCTA
AGCCAGTGACGTGAATGTAAGAGCGCTCG
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TAACCTTCCCTCCGTCTCATTACTTATGCG
GGCTTCATCGCGGTTACCGGCTGGTAAGAT
ACGTAAGCTACACTAGTAAGCATACTGCAG
GTATGAGCCGATCCTGCAATTACCCATATTG
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TGGAAATGACCGCTCTACGTGGATTAACTC
GGGTGGCCCTATAGATAAAATTCTTACAC
CGCCCTGGGATATATAGGCCGTAGCACGT
TTATGTCCTAGTACGCAGTACGCGCCTATTA
ATATAACAGCTGTCAGTAAGGGTCCAGAATT

CTAGGGCCGATGAATTACAAGCAGGTGAAT
AGATACGATTGGGATATTATCACAACAACTC
GCGAATGGATTATCAGTACGAGCCACGGCC
CAGCACATTATTACCAACGGGATTAGGTG
ACGCCAGTGCCTGCTGCTACTACAATGCAT
CGCGGGTGTGACGGTTAAGGTAGCTCGG
GCGCGATAGATGATACTGGCCCAGACCA
GTTTCTCTATATTAACCTAGTAAGACAGGCC
TGGCCCGGAAACCGTTCTGTACCCCGACC
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TATTGACAAATCGCGCGTAGAAAATGCCTG
GGCCGTCTGCCGTCGGTTCTTAGCTATA
CCTTGTAAATTAAATACTGGACCAACCACAGT
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AGCTCACTACTGGTCCACAGGCAGTTCTT
CAGCACCAAGCTTGTATCTGATGCCTGGTCC
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CGAATACTGGTGCATGCCTAATTCTAGTAG
ATAACCTCGTTACCAAGCTCGTTGCTCAA
AAGTCTCTTGTCCCCGACGACGTAGCCAAT
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CTCTAATGCAGTCTCTAGTTGAGATTTACTG
GAGCCATGCTCCCTCTTATGACAACGTGAG
GTTATGTTAGCCTGGAGCTTAGATAACCTCT
CACCGGCCCTGACGTTCTATTGTAGTGGAA
CTACATTCCCCTGCCCACGATAACTGACGTC
GTACTCGCGTGGAACACTAGTACCGTCCGA

CACCGGGCGGATGTCTTAGTTAGTGGTACT
TGTCGCCCTTCCAACAAAAGAAGACGTCTC
AATAGCGTGGTACCGTTTCCGTCTACTC
TCACGGAGATCACTATGTAGTTCAGCGTC
AGGGTGTCTTAAAACATAGAATCCGTTAG
GAGGTTAGGGGCCCCCGTCCCTCTCAC
GACGAAATAATAATAGGGGGAGCTCGGA
CCCGTCCGTCAACCAGAGAATCTAAGGGC
TGGGGGAGGGATTAGACCGTCCATCCTGTCA
AAGGATGCACGTGCAGAGGAAGAGTACAC
CCATCCCAGCGAAAAGTCTATCCTCATCCTG
GGGGTCCTGAAAACCATCCTCTGTCTGAGA
GTATGTTGAGGAGCGGGATGATGGCGACC
CTCCCCAACCGGGGCCCTCTGGTCCGCCTA
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GCTTATTTCCATAGGGTTTGCTCCGGACC
ATCCGGTCGTGTAGCGCGATTGACTTGCCG
GGTTGTGTCCCCGTATCCAGGTACGACCT
CATGGGAACTAGTGGCTGTCCGGCAGTAT
CCTGGTACGCACCTCATGTGGTATGCGTGG
CTGTTGGTCCGTATATGGACCTATATATGGA
TCGAAGC (SEQ ID NO: 7)

JPEG image of Indian Flag

File Size = 1981 Bytes

DNA bases = 7924

After page 13, last line, delete the present Sequence Listing in entirety and replace with the Sequence Listing attached hereto.